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Diffraction grating pattern for credit card, has cells formed proportionally to pattern obtained by Fourier transformation of specific image

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Novelty: The pattern has cell formed by the lattice structure, so that the size of each cell is equal to or less than 100 µm and the area of each cell is proportional to a pattern obtained by the Fourier transformation of a specific image. The phase difference between the cell obtained by the grating pattern and that obtained by the Fourier transformation is $\pi/2$.

Use: For e.g. hologram for credit card, security document, for forgery prevention effect.

Advantage: Improves forgery prevention effect by preventing generation of image under normal observation conditions in white light. Enables to reproduce a real image pattern only upon illumination with a laser beam.

Description of Drawing(s): The figure shows an explanatory diagram of diffraction grating pattern. (Drawing includes non-English language text).

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各セルの回折格子